

REMARKS

A Request for Continued Examination and the requisite fee accompany this paper to remove the finality of the pending Office Action and to obtain entry of the above-indicated claim amendments.

Claims 1-3, 5, 6, 9-14, 20, 22, 23, 25, 26, 28, 41 and 43 are in the application. Claims 1, 20, 23, 26 and 41 have been amended. Claims 1, 20, 23, 26 and 41 are the independent claims herein. No new matter has been added. Reconsideration and further examination are respectfully requested.

Claim Rejections – 35 USC § 103(a)

Claims 1-2, 12-14, 20, 23 and 26 are rejected as being unpatentable over Liang et al. U.S. Patent No. 6,445,773 (“Liang”) in view of Afzal U.S. Patent No. 6,826,258 (“Afzal”).

Similarly, claim 41 is rejected as being unpatentable over Liang et al. in view of Afzal and further in view of Johnson U.S. Patent No. 6,845,248 (“Johnson”).

Applicant respectfully submits that the Liang and Afzal references, considered as a whole, fail to teach or suggest detecting an estimated length of a telephone subscriber loop by analyzing at least one handshaking signal transmitted to or from a DSL modem. As will be explained in more detail below, although Afzal is concerned with estimating the length of a subscriber loop, and Liang may refer to handshaking signals transmitted to or from a DSL modem, a person of ordinary skill in the art would not be led by the references or by any suggestion therein to analyze such handshaking signals to detect estimated loop length.

Applicant will first summarize aspects of the disclosure of the Liang reference. Essentially, the “Detailed Description” section of Liang is divided into two parts. The first part, extending from column 4, line 53 to column 5, line 63, describes a modem test using a pair of ADSL modems. This modem test is apparently performed in a manner known prior to Liang’s invention. The disclosure in this portion of the reference does not include using handshaking signals between the modems to detect any characteristics of the subscriber loop.¹

¹ Applicant notes the statement at column 5, lines 17-20 that training signals, not handshaking signals, may be used “to perform channel analysis”.

The second part of the “Detailed Description” section, which extends from column 5, line 64 to column 9, line 25, describes a line test performed, in accordance with Liang’s invention, using two test units that are not ADSL modems. Thus the signals used to perform the line test described in this passage are not handshaking signals transmitted to or from a DSL modem.

Turning now to the disclosure of the Afzal reference, that reference discloses a procedure in which a rough estimate is first made of the length of a subscriber line, using a conventional procedure such as capacitive measurement. There is no indication that such a conventional procedure may include analysis of handshaking signals transmitted to or from a DSL modem. In the next stage of the procedure described in Afzal, the rough estimate of the line length is used for a more precise line measurement that entails measuring “average loop loss” (ALL). The signals used for determining ALL are generated by a measurement unit 116, and are not transmitted to or from a DSL modem. Accordingly, Afzal has no teaching concerning use of DSL modem handshaking signals for the purpose of line measurement or for any other purpose.

Further in support of applicant’s position herein, applicant notes an error in the Examiner’s reading of the Liang reference. The Examiner states that Liang teaches performing at least part of a digital subscriber line handshaking process by transmitting at least one handshaking signal via a telephone subscriber loop. In support of this statement, the Examiner cites a passage at column 4, line 62 to column 5, line 16 of Liang. The Examiner goes on to cite a passage at column 7, line 53 to column 8, line 36 of Liang as allegedly supporting a teaching of “analyzing the at least one handshaking signal to detect a characteristic of the telephone subscriber loop”. However, as noted above, the passage at column 7 to column 8 is concerned with a different operation from that described at the earlier passage. In particular, the operation described at columns 7 and 8 uses test units rather than modems, and does not in any way use handshaking signals or other signals described in the passage at column 4, line 62 to column 5, line 16. It follows that Liang fails to support the Examiner’s assertion that the reference teaches analyzing a handshaking signal to detect a characteristic of a telephone subscriber loop.

Applicant also wishes to point out another logical disconnection in the Examiner’s reasoning concerning the asserted combination of Liang and Afzal.

Afzal teaches that a characteristic of a subscriber loop that can be detected is the length of the loop, but Afzal does not in any respect teach that the length of the loop can be detected by analyzing handshaking signals. Rather Afzal refers to previously known line length estimation

techniques such as capacitive measurement, and also teaches a more precise loop length measurement technique using average loop loss based on signals generated by a measurement unit.

Liang refers to handshaking signals and proposes a test procedure using signals (not handshaking signals) from test units to determine theoretical and practical data rates that the subscriber loop will support. Like Afzal (and as the Examiner apparently recognizes), Liang does not teach that the length of the subscriber loop can be detected by analyzing handshaking signals.

Thus there is a gap in the combined teachings of the references such that the references, considered as a whole, fail to teach or suggest analyzing handshaking signals to detect the length of a subscriber loop. The Examiner has attempted to close this gap, but does so only based on hindsight from the teachings of the present application and for the purpose of reconstructing the claimed invention. This hindsight reconstruction of the invention is not supported by the teachings of the references and is not proper in view of the applicable case law concerning obviousness rejections under § 103(a)

From the above discussion, it is clear that the references relied upon by the Examiner, considered as a whole, fail to teach or suggest a key teaching of the present application, namely that handshaking signals sent to or from a DSL modem may be analyzed to detect the length of a subscriber loop. Even more to the point, the references fail to teach or suggest the claim limitation, present in claim 1 and other independent claims, of analyzing a handshaking signal transmitted to or from a DSL modem to detect an estimated length of a telephone subscriber loop. It is therefore respectfully requested that the pending claim rejections be reconsidered and withdrawn.



CONCLUSION

Accordingly, Applicant respectfully requests allowance of the pending claims. If any issues remain, or if the Examiner has any further suggestions for expediting allowance of the present application, the Examiner is kindly invited to contact the undersigned via telephone at (203) 972-3460.

Respectfully submitted,

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Date

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